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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/773,620	02/06/2004	Charles Anderson	1458-CA	8356

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LAW OFFICE OF DAN SHIFRIN, PC - CIRRUS LOGIC
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EXAMINER	
LEE, PING	

ART UNIT	PAPER NUMBER
2614	

NOTIFICATION DATE	DELIVERY MODE
12/09/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DAN-SHIFRIN@COMCAST.NET

Office Action Summary	Application No.	Applicant(s)	
	10/773,620	ANDERSON, CHARLES	
	Examiner	Art Unit	
	Ping Lee	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 February 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,11-19,21-33,35-43 and 45* is/are rejected.

7)☒ Claim(s) *10,20,34 and 44* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. In response to the amendment filed on 2/8/08, the election of species requirement is withdrawn.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 6, 14 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 6, the claimed limitation "an effects level of 100% results in a predetermined full amount of compression being applied to the audio source material; and an effects level greater than 100% results in an excessive amount of compression being applied to the audio source material" does not accurately represent the disclosure in the specification. On p. 4, paragraph 13, it is stated that a "normal" amount (100%) is applied, or twice the compression being applied (200%). By stating that a full amount of compression is being applied when the level is 100%, there is no additional compression can be applied.

Claims 14 and 28 have the similar language and thus the similar defect.

Regarding claim 28, the term "the effects level signal" lacks clear antecedent basis.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-5, 12, 13, 21-27 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by Dougherty (US 5,907,622).

Regarding claim 1, Dougherty discloses an audio compressor, comprising:

an audio input coupled to receive audio source material (from 112);

an audio level input coupled to receive an audio level signal indicative of a desired audio output level V (from 122);

a processor (320) operable to generate a compression ratio (from 332) having a level inversely proportional to the level of the audio level signal (see Fig. 2; with higher audio level signal a, the compression ratio is lower);

a compression stage (114) operable to apply compression to the audio source material in response to the level of the compression ratio; and

an audio output operable to provide a compressed audio signal to an audio gain stage (115) having an output level controlled by the audio level signal.

Regarding claim 2, Dougherty shows a noise threshold input coupled to receive a signal indicative of an ambient noise level NT (from 126), the processor (320) further operable to adjust the compression ratio in response to the ambient noise level.

Regarding claim 3, Dougherty shows a noise threshold input coupled to receive a signal from a vehicle status detector (from 126) indicative of an ambient noise level in the vehicle, the processor (320) further operable to adjust the compression ratio in response to the ambient noise level.

Regarding claim 4, Dougherty shows that the vehicle status detector comprising at least one of a velocity sensor, a window state sensor, a sun roof state sensor and a top state sensor (610 in Fig. 7).

Regarding claim 5, Dougherty shows an effects level input coupled to receive an effects level signal EL from a user-adjustable control (322 or 124), the processor further operable to adjust the compression ratio in response to the effects level signal.

Regarding claim 12, Dougherty discloses an audio amplifier, comprising:

an audio input coupled to receive audio source material (from 112) having a signal level Input;

a user-adjustable volume control (volume knob 122) operable to generate an audio level signal V indicative of a desired audio output level;

an audio level input coupled to receive the audio level signal (from 122);

an adjustable compression control (320), coupled to the volume control and operable to generate a compression ratio signal (from 342) in inverse proportion to the audio level signal (see Fig. 2);

means for applying compression (114) to the audio source material in response to the level of the compression ratio signal and outputting a compressed audio signal; and

an audio gain stage (115), coupled to the compression means and the volume control, operable to adjust a gain of the compressed audio signal in response to the audio level signal.

Regarding claim 13, Dougherty discloses means for generating a noise threshold signal NT indicative of the ambient noise level (from 126); and means for adjusting the compression ratio in response to the noise threshold signal (324).

Regarding claim 21, Dougherty discloses that the volume control and the compression control each comprise one portion of a dual-potentiometer (col. 6, lines 63-65; col. 7, lines 2-4; col. 8, lines 58-59).

Regarding claim 22, Dougherty discloses a method of applying compression to audio source material (112), comprising:

adjusting a volume control level V (122) to affect the gain of an output of an audio amplifier (114);

dynamically adjusting a compression ratio in response to the volume control level and in inverse proportion thereto (by 320; see also Fig. 2 for the inverse relationship);

receiving audio source material in the audio amplifier; and

applying compression to the audio source material in an amount determined by the compression ratio.

Regarding claim 23, Dougherty discloses the step of adjusting the compression ratio in response to an ambient noise level (from 126).

Regarding claims 24-26, Dougherty discloses that the ambient noise level is detected by at least one sensor measuring a noise generating characteristic of the vehicle (Fig. 7).

Regarding claim 27, Dougherty discloses the step of adjusting the compression ratio in response to a received effects level signal (from 322 or 124).

Regarding claim 29, Dougherty discloses the step of adjusting the compression ratio in response to a program dynamic range of the audio source material (K_5; col. 12, lines 19-47).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 6, 14 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dougherty.

Regarding claims 6, 14 and 28, Dougherty teaches that the user can select the desired compression level by adjusting k_7 from 0 to 1 (col. 13, lines 2-5). The level of 0 reads on the claimed "an effects level of 0% results in no compression being applied to the audio source material". The level of 1 reads on the claimed "results in an excessive amount of compression being applied to the audio source material". Dougherty fails to state that in what level between 0 and 1 that will result in a predetermined full amount of

compression. However, the term "predetermined full amount of compression" is subjective to the user's preference. Thus, it would have been obvious to one of ordinary skill in the art to modify Dougherty by setting a value between 0 and 1 as the "predetermined full amount of compression" because it was considered as a matter of design choice.

8. Claims 7-9, 16-18, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dougherty in view of Uramoto (US006278751B1).

Regarding claims 7-9, 30 and 31, Dougherty teaches that K_5 represents the dynamic range of the original audio signal from the source (col. 12, lines 10-13). However, Dougherty fails to disclose a program dynamic range input coupled to receive a program dynamic range PDR indicative of a dynamic range of the audio source material. In other words, Dougherty teaches that K_5 is adjustable without explicitly teaching how to change it. In a similar system, Uramoto teaches that the compressing ratio of the compressor (81, 82) is affected by the received program dynamic range ("DRC"; col. 1, lines 21-24; col. 3, lines 40-55; col. 4, lines 24-37). By switching to different broadcasting station, the received program dynamic range reads on one of a plurality of user-selectable program dynamic ranges. The claimed program dynamic range detector reads on the decoder ("17", col. 3, line 40). Thus, it would have been obvious to one of ordinary skill in the art to modify Dougherty in view of Uramoto by detecting the attached program dynamic range in a broadcast signal with the program dynamic range attached in order to accurately determining the correct K_5 and finally the compression ratio.

9. Claims 11, 15, 19, 32, 33, 35-40 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dougherty in view of Shuttleworth et al (hereafter Shuttleworth) (US007333618B2).

Regarding claims 11, 15, 32, 33, Dougherty fails to show a makeup gain stage interposed between the compressor and the audio gain stage. In a similar device, Shuttleworth teaches that it is necessary to have a makeup gain stage in order to ensure that the signal after the compressor is at proper level defined by the max boost (col. 18, lines 57-60) even though the signal has not been compressed. Thus, it would have been obvious to one of ordinary skill in the art to modify Dougherty in view of Shuttleworth by providing makeup gain stage in order to properly boost the original source signal.

Regarding claim 19, Dougherty teaches that the user can select the desired compression level by adjusting k_7 from 0 to 1 (col. 13, lines 2-5). The level of 0 reads on the claimed “an effects level of 0% results in no compression being applied to the audio source material”. The level of 1 reads on the claimed “results in an excessive amount of compression being applied to the audio source material”. Dougherty fails to state that in what level between 0 and 1 that will result in a predetermined full amount of compression. However, the term “predetermined full amount of compression” is subjective to the user’s preference. Thus, it would have been obvious to one of ordinary skill in the art to modify Dougherty by setting a value between 0 and 1 as the "predetermined full amount of compression" because it was considered as a matter of design choice.

The claimed program dynamic range control reads on K_5 in Dougherty.

Dougherty also fails to show the makeup gain stage in claim 19. In a similar device, Shuttleworth teaches that it is necessary to have a makeup gain stage in order to ensure that the signal after the compressor is at proper level defined by the max boost (col. 18, lines 57-60) even though the signal has not been compressed. Thus, it would have been obvious to one of ordinary skill in the art to modify Dougherty in view of Shuttleworth by providing makeup gain stage in order to properly boost the original source signal.

Regarding claim 35, Dougherty discloses an audio compressor, comprising:

an audio input coupled to receive audio source material (112);

an audio level input coupled to receive an audio level signal (from 122) indicative of a desired audio output level V;

a processor (320) operable to generate a compression ratio having a level inversely proportional to the level of the audio level signal (see Fig. 2);

a compression stage (114) operable to apply compression to the audio source material in response to the level of the compression ratio;

an audio output (115) coupled to receive a compressed, gain-adjusted audio signal to provide a processed audio signal to an audio gain stage having an output level controlled by the audio level signal.

Dougherty fails to show a makeup gain stage interposed between the compressor and the audio gain stage in claim 35. In a similar device, Shuttleworth teaches that it is necessary to have a makeup gain stage in order to ensure that the

signal after the compressor is at proper level defined by the max boost (col. 18, lines 57-60) even though the signal has not been compressed. Thus, it would have been obvious to one of ordinary skill in the art to modify Dougherty in view of Shuttleworth by providing makeup gain stage in order to properly boost the original source signal.

Regarding claim 36, Dougherty shows a noise threshold input coupled to receive a signal indicative of an ambient noise level NT (from 126), the processor (320) further operable to adjust the compression ratio in response to the ambient noise level.

Regarding claims 37 and 38, Dougherty discloses a noise threshold input coupled to receive a signal from a vehicle status detector indicative of an ambient noise level in the vehicle, the processor further operable to adjust the compression ratio in response to the ambient noise level (see Fig. 7).

Regarding claim 39, Dougherty discloses an effects level input coupled to receive an effects level signal EL from a user-adjustable control (from 322 or 124), the processor (320) further operable to adjust the compression ratio in response to the effects level signal.

Regarding claim 40, Dougherty teaches that the user can select the desired compression level by adjusting k_7 from 0 to 1 (col. 13, lines 2-5). The level of 0 reads on the claimed "an effects level of 0% results in no compression being applied to the audio source material". The level of 1 reads on the claimed "results in an excessive amount of compression being applied to the audio source material". Dougherty fails to state that in what level between 0 and 1 that will result in a predetermined full amount of compression. However, the term "predetermined full amount of compression" is

subjective to the user's preference. Thus, it would have been obvious to one of ordinary skill in the art to modify Dougherty by setting a value between 0 and 1 as the "predetermined full amount of compression" because it was considered as a matter of design choice.

Regarding claim 45, the claimed downward compressor reads on 114 in Dougherty.

10. Claims 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dougherty in view of Shuttleworth as applied to claim 35 above, and further in view of Uramoto.

Regarding claims 41-43, Dougherty teaches that K_5 represents the dynamic range of the original audio signal from the source (col. 12, lines 10-13). However, Dougherty fails to disclose a program dynamic range input coupled to receive a program dynamic range PDR indicative of a dynamic range of the audio source material. In other words, Dougherty teaches that K_5 is adjustable without explicitly teaching how to change it. In a similar system, Uramoto teaches that the compressing ratio of the compressor (81, 82) is affected by the received program dynamic range ("DRC"; col. 1, lines 21-24; col. 3, lines 40-55; col. 4, lines 24-37). By switching to different broadcasting station, the received program dynamic range reads on one of a plurality of user-selectable program dynamic ranges. The claimed program dynamic range detector reads on the decoder ("17", col. 3, line 40). Thus, it would have been obvious to one of ordinary skill in the art to further modify Dougherty and Shuttleworth in view of Uramoto by detecting the attached program dynamic range in a broadcast signal

with the program dynamic range attached in order to accurately determining the correct K_5 and finally the compression ratio.

Allowable Subject Matter

11. Claims 10, 20, 34 and 44 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ping Lee whose telephone number is 571-272-7522. The examiner can normally be reached on Monday, Wednesday and Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian C. Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ping Lee/
Primary Examiner, Art Unit 2614

pwl